

# Work Order ID 94455

**\*94455\***

Page 1

December-19-12 11:08:15 AM

Item ID: D3220-3

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Doubler

Start Date: 12/19/12 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals: Process Plan: MCS

Date: 12-12-19 Tooling:

Date:

Run Start **\*NR1\***

QC:

Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D3220

B

0.00

**\*100\***

FLOW WATER JET

0.00

Waterjet

Memo

FLOW CNC Waterjet

1-Cut as per Dwg D3220

Dwg Rev: B

Prog Rev: B

2-Deburr if necessary

110

QC2- Inspect parts off machine FAI/FAIB

0.00

**\*110\***

QC

Memo

0.00

Quality Control

6 0 Im 13-2-E

PTO

6 0 Im 13-2-E

NCR: ☒ Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA for Date: 13/02/25QA Closed: 11 Date: 11

Work Order: <u>94455</u> Part No. <u>D3220-3</u> NCR No. <u>13-2345</u>				<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input checked="" type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b> <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input checked="" type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Material <input type="checkbox"/> Setup <input type="checkbox"/> Other <input type="checkbox"/> Process <input type="checkbox"/> Supplier <input type="checkbox"/> Training <input type="checkbox"/> Unapproved <input type="checkbox"/>	13-2-8	110	6	Part scrap use wrong material operation error QTY @	DAS 16 2-8 037012 13/2/8	Destroyed part and label with R# 121889 QTY @ 3.63 57.78	m 13-2-7	DAS 15 2-8 13-2-8	DAS 16 2-8 037012 13/2/8		
<b>FAULT CATEGORY</b>											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other		

# Work Order ID 94455

**\*94455\***

Page 2

December-19-12 11:08:15 AM

Item ID: D3220-3

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Doubler

Start Date: 12/19/12 Start Qty: 6.00

**\*6\***

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 6.00

**\*6\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 <b>*120*</b> QC Quality Control	QC8- Inspect parts - second check  Memo	0.00 0.00 DAS 15 13.2.8				6			
130 <b>*130*</b> HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00 0.00				6	75.324		
140 <b>*140*</b> QC Quality Control	QC7-Inspect Chemical Conversion Coat  Memo	0.00 0.00 SMD 13.2.14				6			

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>						
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>			
Doc/Data <input type="checkbox"/>												
Equip/Tooling <input type="checkbox"/>												
Operator <input type="checkbox"/>												
Material <input type="checkbox"/>												
Setup <input type="checkbox"/>												
Other <input type="checkbox"/>												
Process <input type="checkbox"/>												
Supplier <input type="checkbox"/>												
Training <input type="checkbox"/>												
Unapproved <input type="checkbox"/>												
<b>FAULT CATEGORY</b>												
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other	

# Work Order ID 94455

**\*94455\***

Page 3

December-19-12 11:08:15 AM

Item ID: D3220-3

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Doubler

Start Date: 12/19/12 Start Qty: 6.00 **\*6\***

Cust Item ID:

Required Date: 1/11/13 Req'd Qty: 6.00 **\*6\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Identify as per dwg & Stock Location: _____	0.00							
<b>*150*</b>									
Packaging	Memo	0.00							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
<b>*160*</b>									
QC	Memo	0.00							
Quality Control									

*12/3/15 (6)*

*12/19/15*

*MF  
13-2-15*

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____				<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		<b>AGAINST DEPARTMENT/PROCESS</b>  <div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/>            Machining <input type="checkbox"/>            Thermoforming <input type="checkbox"/>            Large Fab <input type="checkbox"/> </div> <div>           Crosstube <input type="checkbox"/>            Small Fab <input type="checkbox"/>            Finishing <input type="checkbox"/>            Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/>            Prod. Eng. Coord. <input type="checkbox"/>            Rec/Store/Packaging <input type="checkbox"/>            Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/>            Quality <input type="checkbox"/>            Other <input type="checkbox"/> </div> </div>					
<b>Root Cause</b>	<b>Date</b>	<b>Step</b>	<b>Qty</b>	<b>Description of work order update or Non-conformance</b>	<b>Initial Chief Eng</b>	<b>Action Description</b>	<b>Sign &amp; Date</b>	<b>Verification</b>	<b>QC Inspector</b>		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY											
<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube			<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio			<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions			<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

# Picklist Print

December-19-12 11:08:14 AM

Work Order ID: 94455

Parent Item: D3220-3

Parent Item Name: Doubler

Start Date: 12/19/12

Required Date: 1/11/13

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP Rev: A New Issue 05-11-06 JLM  
IPP: B 06.11.15 waterjet EC  
IPP C: 08.11.26 Comment added to step 2 KJ Verified by: eC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.050 2024-T3 .050 sheet		Purchased	No			100	sf	253.1968	0.5937	37496844			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				MAT022		253.1968408							
				117684		22.4							
				121216		91.2968408							
				121889		139.5				121889			

Jim B-2-8

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

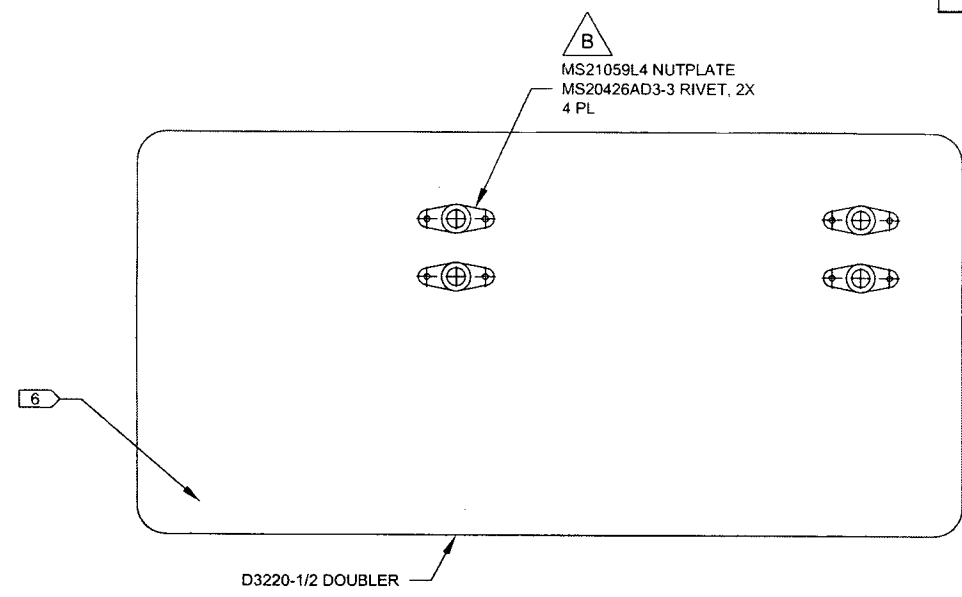
### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions  <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Item	Qty -041	Qty -042	Part Number	Description
1	X		D3220-041	DOUBLER ASSEMBLY
2		X	D3220-042	DOUBLER ASSEMBLY
3	1		D3220-1	DOUBLER
4		1	D3220-2	DOUBLER
5	4	4	MS21059L4	NUTPLATE
6	8	8	MS20426AD3-3	RIVET



SHOP COPY  
 RETURNED  
 ENGINEER  
 UNCONTROLLED  
 SUBJECT TO APPROVAL  
 WITH NO RECORD  
 WORK ORDER  
 NO. 944 ST 115  
 12-12-19

**RELEASED**  
 2009-09-09

**D3220-041 DOUBLER ASSEMBLY (SHOWN WITH D3220-1 DOUBLER)**  
**D3220-042 (OPPOSITE)**

- NOTES:**
- 1) MATERIAL: N/A
  - 2) FINISH: N/A
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-04X" USING FINE POINT PERMANENT INK MARKER
  - 7) WEIGHT: D3220-041 = 0.53 lbs  
D3220-042 = 0.53 lbs

B	DRAWING UPDATED TO CURRENT STANDARDS. Ø0.316 WAS Ø0.323 (ZN C8-2, B4-3); MS20426AD3-3 WAS MS20426AD3-4 (ZN D4-1); CORRECT TYPO NOTE 1 (ZN A8-2, A8-3); REF PAR 09-025		RF	09.07.08
A	NEW ISSUE		CP	03.10.16
REV.	DESCRIPTION		BY	DATE
DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3220 TITLE DOUBLER SCALE NTS COPYRIGHT © 2003 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>		
DRAWN	RF			
CHECKED	RF			
MFG. APPR.	RF			
APPROVED	RF			
DE APPR.	RF			
DATE	09.07.08			

94455

Ø0.098  
CSK Ø0.180x100°  
NEAR SIDE, 8 PL

**B**  
Ø0.316  
TYP, 4 PL

GRAIN  
DIRECTION

R0.50  
TYP

**D3220-1 DOUBLER**

B1-2  
SEE DETAIL A  
TYP

100°  
REF

**DETAIL A** D2-2  
SCALE 5X

0.050  
REF

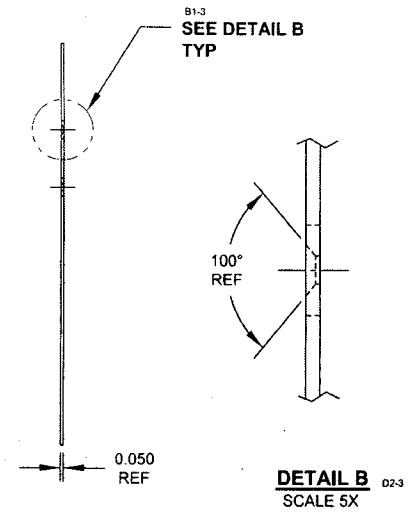
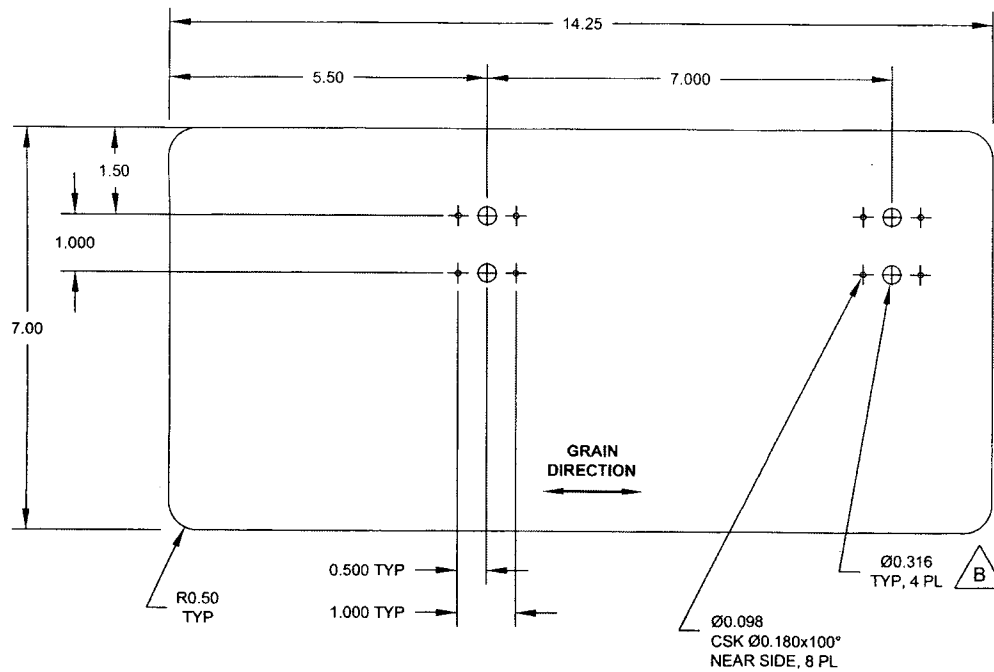
**RELEASED**  
2009-09-08

**NOTES:**

- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK  
REF DART SPEC. M2024T3S.050
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-1" USING REMOVABLE TAG
- 7) WEIGHT: 0.50 lbs

DESIGN	DS	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3220	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		DOUBLER	NTS
DATE	09.07.08	<small>COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

94455







**D3220-2 DOUBLER**

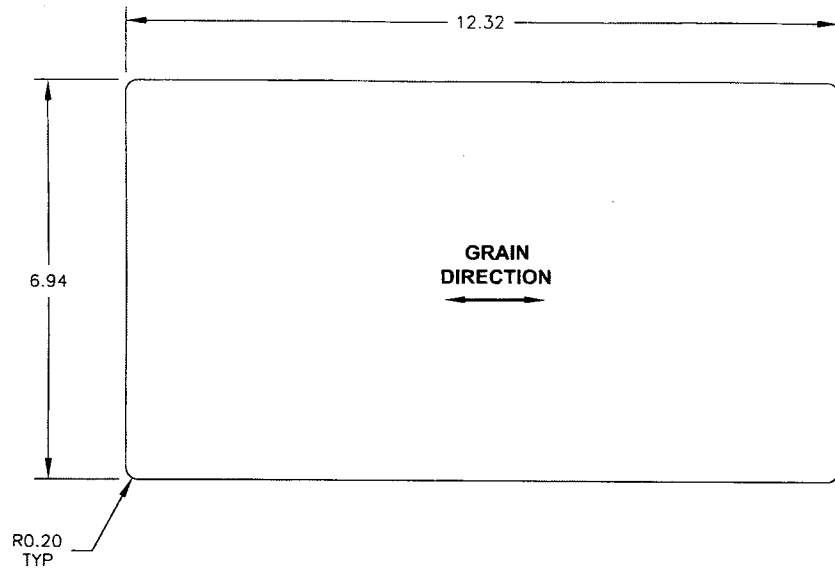
**RELEASED**  
2009-09-09

**B**

- NOTES:**
- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK  
REF DART SPEC. M2024T3S.050
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-2" USING REMOVABLE TAG
  - 7) WEIGHT: 0.50 lbs

DESIGN	DS	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3220	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		DOUBLER	NTS
DATE	09.07.08	COPYRIGHT © 2003 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

94455



D3220-3 DOUBLER

**RELEASED**  
2009-09-09  
*[Signature]*

**NOTES:**

- 1) MATERIAL: 2024-T3 ALUMINUM SHEET, 0.050 THICK  
REF DART SPEC. M2024T3S.050
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3220-3" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.43 lbs

DESIGN	DS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D3220	SHEET 4 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	DOUBLER	NTS
DATE	09.07.08	<small>COPYRIGHT © 2003 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	